

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

(12) **UK Patent Application** (19) **GB** (11) **2 235 206 A** (13)
(43) Date of A publication 27.02.1991

(21) Application No 8918982.3

(22) Date of filing 21.08.1989

(71) Applicant
Unilever Plc

(Incorporated in the United Kingdom)

**Unilever House, Blackfriars, London, EC4P 4BQ,
United Kingdom**

(72) Inventors
**Espen Dag Mansfeld
Dieter Pelss
Katja Ellen Praefke**

(74) Agent and/or Address for Service
**J E Rogers
Patent Division, Unilever Plc, PO Box 68, London,
EC4, United Kingdom**

(51) INT CL⁴
C11D 3/40

(52) UK CL (Edition K)
C5D DHC D124 D180

(56) Documents cited
**GB 1505274 A GB 1248994 A GB 1053388 A
US 4082682 A**

(58) Field of search
**UK CL (Edition J) C5D
INT CL⁴ C11D**

(54) **Multiple component detergent**

(57) A detergent system comprising two or more components which are separately packaged in multiple dose quantities, each of the components having a distinctive colour to distinguish them from one another. The system can include a measuring device having calibrations for each component, the calibrations being colour coded to correspond to the colour of the components. Preferably the packaging of the components is also colour coded to correspond to the colour of respective components and a dosing guide can be provided to show the required quantities of each component according to the wash conditions.

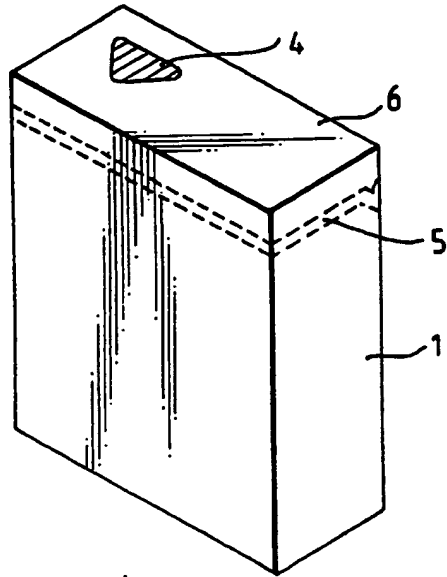


Fig. 1

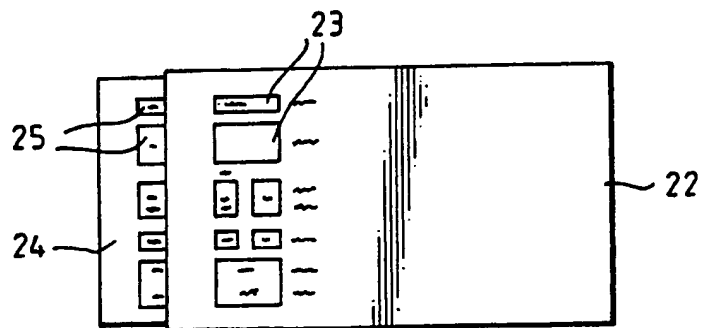
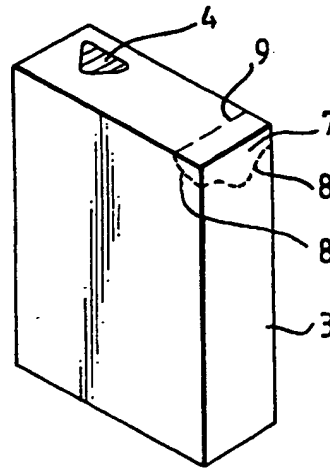
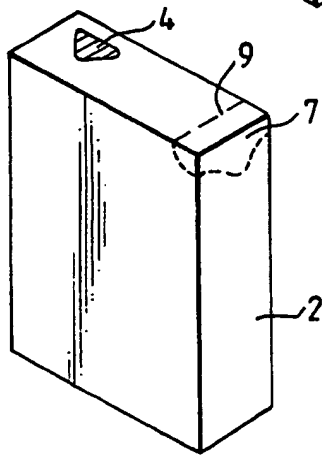


Fig. 4

Fig. 2

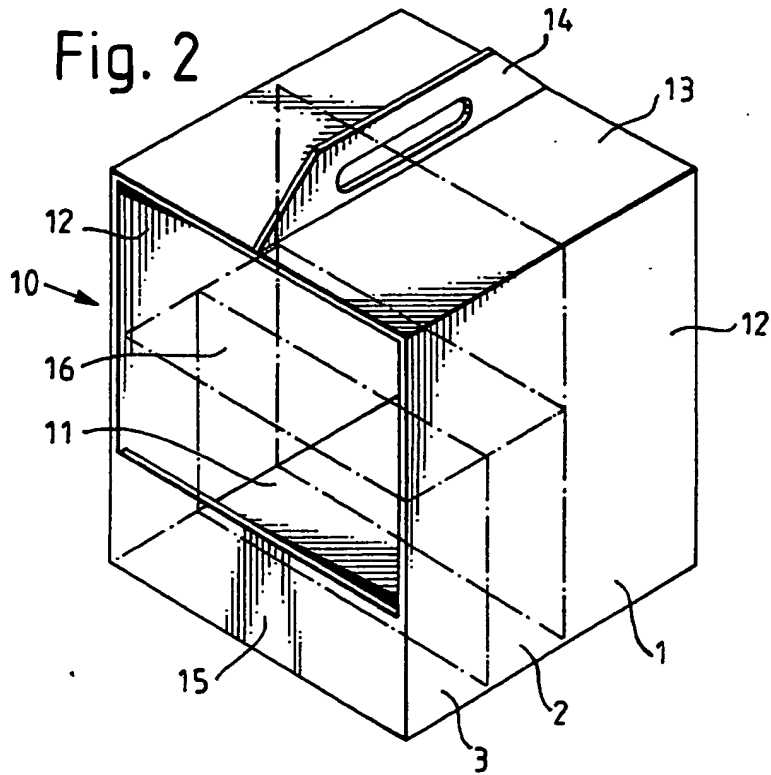
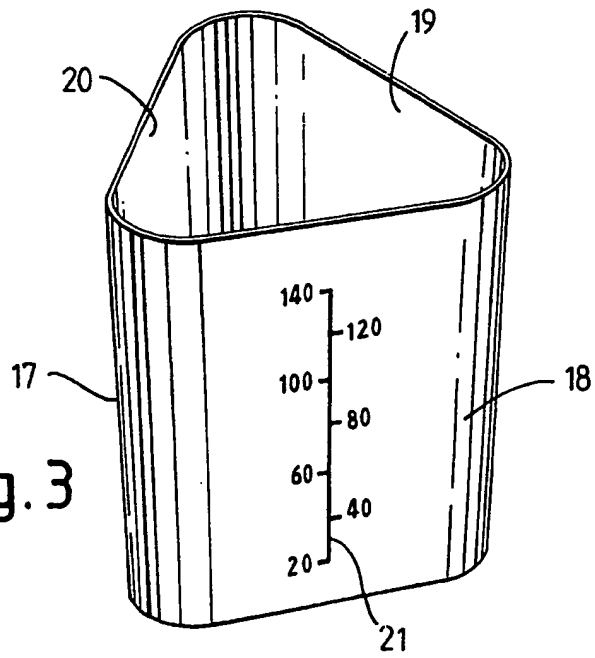


Fig. 3



MULTIPLE COMPONENT DETERGENT SYSTEM

5 This invention relates to a detergent system
comprising two or more components each of which are
separately packaged. The user is thus free to dose each
of the components individually in amounts according to the
nature of the articles being washed, the degree of soiling
and the hardness of the water to form a wash liquor suited
10 to the washing conditions. As compared to a fully
formulated single detergent the proportions of individual
components can therefore be chosen to avoid excessive
usage of any particular component in order to include
within the wash the desired amount of another component.
15 Minimising the usage of each individual component
minimises both cost and the amount of any contamination in
the effluent and hence the load on the environment and
correct dosing protects the washing machine.

20 Detergent systems of this kind are known but they
have the disadvantage that although the packaging of the
individual components may clearly indicate which component
is contained within which package the products themselves
are indistinguishable from one another in appearance the

natural colour of the components usually being white or near white. The user is therefore required to concentrate on the task of dosing the individual components to ensure that the correct quantities of each are dosed into the washing machine. In the event of the users' concentration being broken, eg by an interruption to the dosing task for any reason, errors can occur such as dosing too much of one component or omitting a component.

According to the present invention there is provided a detergent system comprising two or more components each packaged and dosed individually to form a wash liquor in which each of the components have a distinctive colour to distinguish them from one another. The colours of the components thus enable the user to see at a glance whether a particular component has been dosed and also enables an assessment to be made as to whether the full quantity has been dosed of a component which is dosed in two steps. The consumer can therefore return to the task of dosing after an interruption without having to remember at what step the interruption occurred.

When the natural colour of the components is white or near white the distinctive colour can be imparted to components as desired by an suitable colouring process. For example, the distinctive colour can be achieved by the addition of a dye or by coating particles with a coloured coating composition.

The colouring process can be carried out on the component so that the component is homogeneously coloured. Particularly when the colouring process adds an ingredient to the component which is otherwise unnecessary for the washing process the colouring process is preferably effected on part only of a component. Thus part of a component can be subjected to a colouring process to

provide coloured particles such as granules or noodles or the like which when mixed with the uncoloured remainder of the component give the component a speckled or variegated appearance, the coloured particles giving the component a distinctive colour.

Even when the natural colour of each of the components is the same or similar it is not necessary to subject all or part of each component to a colouring process in order that each of the components have a distinctive colour. One of the components, preferably that component which is dosed in the largest quantities, can be uncoloured to minimise the addition of any otherwise unnecessary colouring material.

To assist the consumer further in the dosing task the packaging of each individual component preferably carries an identification in a colour corresponding to the colour of the component.

The detergent system can include a main wash component and a bleach additive, the main wash powder being uncoloured and the bleach additive comprising coloured particles and preferably also includes a water softener component having coloured particles.

In order to dose each of the components accurately the detergent system can include a measuring device such as a calibrated measuring cup or scoop. According to another aspect of the present invention the measuring device can be calibrated for each of the components, the calibrations being shown on the device in colours corresponding to the colours of the components. The user can thus readily recognise which calibrations are required for a particular component of the detergent system by matching the colour of the component with that of the

calibrations. The measuring device can have a plurality of faces, the calibrations for individual components each being shown on separate faces. The different calibrations are thus separated from one another to minimise any
5 confusion and further simplify the dosing task.

A detergent system according to the present invention can conveniently comprise three components and the measuring beaker has three upright faces each calibrated
10 for one of the components. The upright faces can conveniently form an equilateral triangle.

A detergent system according to the present invention can further include a dosing guide comprising a flat open
15 ended sleeve having a number of apertures therein and slide moveable within the sleeve to bring one of a plurality of sets of indications into view through the apertures, each of the sets of indications showing the quantities of individual components of the detergent
20 system required according to the nature of the articles being washed and the hardness of the water used to make up the wash liquor. The user can move the slide within the sleeve to reveal in the apertures the nature of the articles to be washed simultaneously with the hardness of
25 the water in which position of the slide the required amounts of each of the components of the detergent system are shown in other apertures of the sleeve. The indications of the components in respect of different water hardness ranges can each be provided on a separate
30 slide or conveniently grouped together for a single water hardness range on a single slide. The slide can then be folded to move within the sleeve to give the component indications according to the nature of the articles to be washed for that single water hardness range.

Preferably the dosing guide is coloured to indicate the quantities of individual components in colours corresponding to those of the components.

5 The entire detergent system can conveniently be packaged together in a single outer wrapper for easy transport and distribution and for purchaser convenience. The detergent system can also include a water hardness testing device for determining the hardness of the water
10 used to make up the wash liquor.

The invention will now be more particularly described with reference to the accompanying diagrammatic drawings in which:

15 Figure 1 shows three cartons each for one of the components of a three component detergent system;

Figure 2 is a perspective view of an outer wrapper
20 for the cartons of Figure 1;

Figure 3 is a perspective view of a measuring beaker;
and

25 Figure 4 is a front view of a dosing guide.

As shown in Figure 1 a detergent system according to the present invention comprises three individual cartons 1, 2 and 3. The larger carton 1 contains a main wash
30 powder and the two smaller cartons 2 and 3 contain a bleach additive and a water softener respectively. Depending upon the nature of the articles to be washed and the hardness of the water the additives in the cartons 2 and 3 can be dosed individually, if required, in varying
35 amounts with the main wash powder to form a wash liquor.

Each of the components of the detergent system packaged within the cartons 1, 2 and 3 have a colour which distinguishes the components from one another. The main wash powder is uncoloured and is therefore the natural white colour of the powder. The bleach and water softener additives each include granules dyed in distinguishing colours, eg blue and green respectively, giving each of these components a distinctive colour. The colours of the components are repeated on the packaging in any convenient manner, eg the panels 4 on each carton can be coloured to correspond to the colour of the component.

Each of the cartons is provided with means for opening as is well known in the art. The larger carton 1 containing the main wash powder has a tear strip 5 which when removed allows the entire top of the carton to be hinged. This allows the contents to be easily removed using a scoop or similar device if desired. The two small cartons 2 and 3 each have portions 7 which can be partially detached from the cartons along lines of weakness 8 to allow the portions 7 to hinge along fold lines 9. The contents can then be poured through the opening so created. Alternatively the openings in the cartons can be provided by metal or plastic pour spouts as is well known in the art.

The three cartons are packaged together in a single outer wrapper 10 as shown in Figure 2. The wrapper comprises a base panel 11 and two opposite side walls 12 extending upwardly from the base panel 11 and folded together form a top panel 13 having a carrying handle 14 where they meet. Two other opposite side walls 15 extend upwardly from the base panel but do not extend the full height of the side walls 12 so that the cartons, shown in dotted lines in Figure 2, are visible within the wrapper. As shown in dotted lines in Figure 2 the carton 1 is

upright and the cartons 2 and 3 are placed on their sides leaving an empty space 16 above them.

5 The packaged detergent system is convenient for
distribution and sale although individual components can
also be made available in various size cartons as desired
since the usage of the various components will differ
according to the washing conditions and hence the wash
liquor required. The practical result of this is that the
10 contents of each of the cartons may not be used up
simultaneously.

15 In use the user doses each of the components from
respective cartons individually as required. Because the
components each have a distinctive colour it is possible
to ascertain visually whether each of the desired
components have been dosed, eg into a washing machine
dispensing drawer or other dispensing device. Even if the
user is distracted from the dosing task, such as by the
20 telephone, they can return to the task and see exactly
which steps of the dosing task have been completed.

25 To assist in the dosing of the individual components
the detergent system can include a measuring device in the
form of a measuring cup 17 as shown in Figure 3. The
measuring cup has three generally upright faces 18, 19, 20
arranged to form an equilateral triangle and each of the
faces is calibrated as shown at 21 for one of the
components of the detergent system. To enable the user to
30 easily recognise which of the calibrations relate to a
particular component the calibrations on each face are
coloured to correspond with the colour of the component
itself. Alternatively, the calibrations can be shown in
coloured panels or the calibrated faces of the cup can be
35 coloured in any other way to indicate which calibrations
relate to particular components.

The required doses of each individual component according to the nature of the articles being washed and the hardness of the water can be indicated in the usual way on the cartons, for example in tabular form.

- 5 Alternatively, or additionally, the detergent system can include a dosing guide as shown in Figure 4.

10 The dosing guide comprises an open ended sleeve 22 having a plurality of apertures 23 in one face. Slidable within the sleeve is a slide 24 having a number of indications 25 printed thereon alternative sets of which can be brought into view through the apertures 23. The user moves the slide until there is visible within the apertures the nature of the wash, eg heavily soiled, 15 lightly soiled, coloureds, etc, and the hardness of the water. The user can then read off from other apertures the required doses of the main wash powder and the bleach and water softener, if any, that are required.

20 All of the indications can be printed on a single slide, using both sides of the slide if desired. Since the dosing guide is likely to be used in a single location where the water hardness value will not vary it is convenient to group all the indications for each range of 25 water hardness values together on the slide. The slide can then be folded so that only indications for the desired hardness range can be brought into view through the apertures. Alternatively a separate slide can be provided for each water hardness range.

30 For completeness, the detergent system also includes a water hardness testing device with which the user can establish the water hardness value, or the range of hardness values within which the hardness value of the 35 water to be used lies.

Having established the hardness value range within which the hardness value of the available water lies the user folds the slide, or selects the appropriate slide and inserts the slide into the sleeve so that the various
5 doses for that water hardness range can be brought into view through the apertures. The slide is then moved to expose within one of the apertures the nature of the articles to be washed, eg normal soil. Within further apertures there is then indicated the quantities of main
10 wash powder (including any appropriate dose of main wash powder as a pre-wash), bleach additive if appropriate, and any water softener necessary for the particular washing conditions. For convenience the indications of the components on the dosing guide are given in colours
15 corresponding to the colours of the components eg by a coloured rim to appropriate apertures.

Thus if the main wash powder is white the quantity required is indicated in white on the dosing guide. The
20 user then takes the carton with the white indication and fills the measuring cup with the required amount of white component following the calibrations indicated in white thereon. The dosing task is completed in the same way for the other components as necessary.

25 Each component is dosed into either a dispensing drawer of a washing machine or other dispensing device to be used in a washing machine, the distinctive colours of each of the components allowing the presence of the
30 required components to be checked up until the time the components are added to the water to form the wash liquor.

Each of the measuring device, dosing guide and water hardness tester, if any, which are included in the
35 detergent system can be contained together with the cartons in the outer wrapper. The dosing guide can

conveniently be disposed between two cartons and the measuring device retained within the space 16 above the two smaller cartons 2 and 3.

5 Whilst the invention has been described with
reference to a powdered detergent system it will be
understood that the detergent components can also be in
liquid form, the colours being chosen so that when the
components are added together the resulting colours enable
10 the user to readily establish which components are
present.

C L A I M S

1. A detergent system comprising two or more components
each packaged and dosed individually to form a wash
5 liquor in which each of the components have a
distinctive colour to distinguish them from one
another.
2. A detergent system according to claim 1 in which one
10 or more component has a colour comprising coloured
particles within an uncoloured component.
3. A detergent system according to claim 1 or claim 2 in
15 which the packaging of each individual component
carries an identification in a colour corresponding
to the colour of the component.
4. A detergent system according to any one of the
preceding claims comprising a main wash component and
20 a bleach additive, the main wash powder being
uncoloured and the bleach additive comprising coloured
particles.
5. A detergent system according to claim 4 including a
25 water softener component having coloured particles.
6. A detergent system according to any one of claims 1
to 5 including a measuring device calibrated for each
of the components, the calibrations being shown on
30 the device in colours corresponding of the colours of
the components.
7. A detergent system according to claim 6 in which the
measuring device has a plurality of faces, the
35 calibrations for individual components each being
shown on separate faces.

8. A detergent system according to claim 7 comprising three components the measuring device having 3 upright faces.
- 5
9. A detergent system according to claim 8 in which the upright faces form an equilateral triangle.
- 10
10. A detergent system according to any one of claims 6 to 9 including a dosing guide comprising a flat open ended sleeve having a number of apertures therein and slide moveable within the sleeve to bring one of a plurality of sets of indications into view through the apertures, each of the sets of indications showing the quantities of individual components of the detergent system required according to the nature of the articles being washed and the hardness of the water used to make up the wash liquor.
- 15
11. A detergent system according to claim 10 including a number of slides each of which correspond to the water hardness range of the water used to make up the wash liquor.
- 20
12. A detergent system according to claim 10 in which the indications of the components in respect of a single water hardness range are grouped together on a single side.
- 25
13. A detergent system according to any one of claims 10 to 12 in which the dosing guide is coloured to indicate the quantities of individual components in colours corresponding to those of the components.
- 30

14. A detergent system according to any one of the preceding claims packaged together in a single outer wrapper.
- 5 15. A detergent system according to anyone of the preceding claims including a water hardness testing device for determining the hardness of the water used to make up the wash liquor.